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Rome directorate research may transform telemedicine

by Fran Crumb, Information Directorate

ROME, N.Y. — The patient may be in an Appalachia mining town. His medical records and a renowned specialist in the field may be hundreds of miles away — in opposite directions. An accurate and instantaneous diagnosis may be in his future.

The Air Force Research Laboratory Information Directorate and SAIC of San Diego, Calif., have entered into a three-year, $6,967,400 agreement for research that will develop technology for "virtual private networks" in future internets. The research is being funded by the Defense Advanced Research Projects Agency of Arlington, Va., under its Next Generation Internet (NGI) program.

SAIC will establish network interconnectivity between medical schools and hospitals, including the University of Pennsylvania, Johns Hopkins University, the University of Pittsburgh School of Medicine and the University of Medicine and Dentistry of New Jersey.

"The focus of this research will be to establish NGI connectivity and develop enabling Next Generation Virtual Private Network technology to support development of several applications," said Daniel J. Hague, program manager in the directorate's Information Grid Division.

"Researchers will develop an intelligent archiving application focusing on radiology imagery and other multimedia biomedical data," Hague said. "This technology will provide authorized users seamless access to distributed data for patient care and disaster recovery. In addition, they will develop a collaborative telemicroscopy application, with the capability to electronically share three regional telemicroscopy centers among four regional medical institutions."

"Success in the 21st century — in nearly all fields — will depend on the ability to collaborate electronically," Hague said. "While the Department of Defense is specifically interested in this technology to support ballistic missile defense, there are numerous potential civilian applications, primarily in education and the medical field."

"We will be looking at using advanced networks and expanded bandwidth for intelligent archiving, which is the storing of medical information and the ability to access distributed medical records accurately," Hague said. "The other major field is teleradiology, where x-rays and MRIs can be archived and accessed by a medical expert somewhere else for an interpretation and diagnosis."

"A primary goal for medical purposes will be to develop the ability to access patient records and high quality radiology information across a virtual network with complete security," Hague said.

The government's NGI program, under which the Department of Defense will invest $50 million, is part of an interagency effort to advance networking technologies and new applications through deployment of national-scale testbeds that are vastly superior to today's Internet. First demonstrated by the military in the 1970s, Internet technology is the foundation of today's military and commercial network systems. **@**